

Claims:

1. (Currently Amended) A prosthesis comprising:
a substantially rigid shell for attachment to skeletal structure, the shell including a shell wall defining a shell receiving area and a terminal shell margin defining a shell opening to the shell receiving area, the shell wall including a circumferential catch ledge;
a resiliently yieldable liner for insertion in the shell receiving area, the liner including a liner wall having a liner inner surface defining a liner receiving area, the liner wall having a terminal liner margin defining a restricted liner opening to the receiving area; and
a substantially rigid retainer ring presenting a catch leg having a catch lip,
upon assembly of the prosthesis, the ring engaging the liner wall to attachable to the shell to
engage the terminal liner margin and inhibit deformation of the terminal liner margin
thereof and the catch lip engaging the catch ledge to secure the liner in the shell
receiving area.
2. (Original) The prosthesis according to claim 1 wherein the liner extends to envelop a circumferential side apex of a femur ball.
3. (Original) The prosthesis according to claim 1 wherein the inner surface is substantially spherical, and the liner extends to envelop greater than a hemisphere of a femur ball.

4. (Original) The prosthesis according to claim 1 wherein the restricted liner opening has a liner opening diameter smaller than a largest diameter of the liner receiving area.

5. (Original) The prosthesis according to claim 1 wherein the liner comprises a plurality of expansion slits positioned adjacent the terminal liner margin and extending into the liner whereby the restricted liner opening is enlargable and can be further restricted.

6. (Currently Amended) The prosthesis according to claim 1 wherein the catch leg and catch ledge form retainer ring includes a snapping attachment mechanism attaching the retainer ring to the shell, ~~and the snapping attachment mechanism including a catch leg having a catch lip, and the shell includes a catch ledge for engaging and holding the catch lip.~~

7. (Currently Amended) The prosthesis according to claim [[6]] 1 wherein the catch leg includes a plurality of contraction slots dividing the catch leg.

8. (Withdrawn) The prosthesis according to claim 1 wherein the retainer ring includes an angled liner engagement surface, the liner includes an angled retainer ring engagement surface, and a liner engagement surface angle is less than a retainer ring engagement surface angle.

9. (Withdrawn) The prosthesis according to claim 8 wherein the liner engagement surface angle is approximately 168° , and the retainer ring engagement surface angle is approximately 170° .

10. (Currently Amended) The prosthesis according to claim ~~[[6]]~~ 1 wherein the catch leg comprises an intermittent catch leg including spaced apart tabs, the protrusions are spaced apart to receive the tabs therebetween, and there are more recesses than protrusions.

11. (Original) The prosthesis according to claim 1 wherein the liner inner surface extends greater than 180° three dimensionally about a geometric center of the inner surface.

12. (Currently Amended) The prosthesis according to claim 1 where the liner includes a liner catch lip, ~~[[and]]~~ the shell ~~includes~~ a catch ledge ~~[[for]]~~ engaging and holding the liner catch lip.

13. (Original) The prosthesis according to claim 1 wherein the retainer ring comprises an attachment portion having the attachment mechanism thereon, a retainer portion engaging the terminal liner edge, and a connection between the attachment portion and th retainer portion.

14. (Original) The prosthesis according to claim 1 wherein the liner includes a positioning flange for engaging an upper surface of the terminal shell margin forming a relief gap between the shell and the liner.

15. (Currently Amended) A hip prosthesis comprising:
a substantially rigid shell for attachment to a pelvis, the shell including a shell wall defining a shell receiving area and a terminal shell margin defining a shell opening to the shell receiving area, the shell wall including a circumferential catch ledge;
a resiliently yieldable liner for insertion in the shell receiving area, the liner including a liner wall having a liner inner surface defining a liner receiving area, an expandable terminal liner margin defining a restricted liner opening to the receiving area, and a base portion opposite the terminal liner margin; and
a continuous and substantially rigid retainer ring presenting a catch leg having a catch lip, upon assembly of the prosthesis, the ring engaging the liner wall to attachable to the shell to
engage the terminal liner margin and inhibit expansion of the terminal liner margin thereof and the catch lip engaging the catch ledge to secure the liner in the shell receiving area.

16. (Original) The hip prosthesis according to claim 15 wherein the expandable liner margin comprises a plurality of expansion slits.

17. (Currently Amended) A method for hip arthroplasty, the method comprising:
attaching a shell to a patient's pelvis, the shell including a shell wall presenting a circumferential catch ledge;
inserting a liner having an expandable portion into the shell;
positioning a retainer ring presenting a catch leg over the patient's femur and behind a ball of the femur;
expanding the expandable portion of the liner with the ball of the femur;
forcing the ball of the femur ~~passed~~ past the expandable portion and into the liner;
attaching the retainer ring to the shell thereby causing the ring catch leg to engage the shell catch ledge; and
engaging the expandable portion of the liner with the retainer ring to inhibit expansion of the expandable portion of the liner.

18. (Original) The method according to claim 17 wherein attaching the retainer ring comprises snapping the retainer ring to the shell, and expanding the expandable portion of the liner comprises elastically expanding the expandable portion of the liner.

19. (Original) The method according to claim 17 wherein positioning the retainer ring over the femur comprises positioning a retainer portion of the retainer ring over the femur, and attaching the retainer ring comprises attaching the attachment portion to the shell and connecting the retainer portion to the attachment portion.

20. (Original) The method according to claim 17 further comprising forming a relief gap between a base of the shell and a base of the liner.